

PRESENTATION BENT IRON WORK DESIGN WITH THIS NUMBER.

Hobbies

• A Weekly • Journal •

For Amateurs of Both Sexes.

No. 3. VOL. I.

NOVEMBER 2, 1895.

ONE PENNY.

Stamps Week by Week.

Photographic Notes.

Scroll-Sawing, Inlaying, and Overlaying.

The Optical Lantern.

Playgrounds of Electrical Science,—

The Induction Coil—How to Make and Use it.

A few Notes on Cycling and Sport.

How to Build and Decorate Bazaar Stalls.

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STAMPS

Week by Week.

A Philatelic Causerie by PERCY C. BISHOP,

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and "PHILATELIC REVIEW OF REVIEWS;" Founding Member of the LONDON PHILATELIC CLUB.

*. In future numbers of *Hobbies* the Philatelic Editor will reply to any queries applying to his department. Letters enclosing stamps for examination or valuation should be accompanied by a stamped and addressed envelope, and all communications should be directed to the Stamp Editor, "HOBBIES," BOUVERIE HOUSE, SALISBURY SQUARE, LONDON, E.C.

THE RAGE FOR ENGLISH STAMPS.



URING the past two years English stamp collectors have developed a strong fancy for the stamps of their own country. English stamps are a most fascinating study. Many Philatelists devote themselves solely to English and English Colonials, but some of the older Colonial issues have reached such fabulous prices that this combination is too large an order for the timbrophile of moderate means. To anyone seeking a country to "specialise" in I can confidently recommend the United Kingdom, or as all our stamp albums and catalogues wrongly describe it, "Great Britain." English stamps are numerous enough and varied enough to monopolise any collector's whole time, and many prominent Philatelists are beginning to find this out. To such an extent have English stamps become the rage among English collectors that already a magazine, to be called the *English Specialists' Journal*, has been projected and announced for publication by Mr. H. L'Estrange Ewen, of Swanage, Dorset.

THE COLLECTION OF PLATE NUMBERS

is in great part responsible for the boom in English stamps. The plate number is a numeral of microscopical dimensions placed on the stamp purely for the purposes of official record. Yet in the eyes of the Philatelist a difference of plate number in the same issue of English stamps constitutes a distinct variety. When I mention that in the old penny red stamps of the 1861-80 issue there are no less than 153 distinct plate numbers (each one constituting a distinct variety in Philatelic eyes), it will at once be seen how the scope of

a collector of English stamps has been widened by this innovation. In the annexed engraving, which illustrates a portion of one of the red stamps of the issue referred to, my readers will note the number "170" in the networked border of the stamp. The size of course is magnified here; in the stamps themselves the figures are so small as to be almost invisible to the naked eye. Sometimes a glass is necessary to decide a doubtful number. Some of these plate numbers are

BECOMING QUITE SCARCE.

For instance a reference to Hilckes' Catalogue of English Adhesives, a book that every English specialist swears by, shows the following to be the present market value of the scarcest of these 1d. plate numbers:—

Numbers:—				3252		Unused.		Used.	
						s.		d.	
Plate 132, issued 1869-73				25	0	2		6	
Plate 153, issued 1872-77				20	0	1		6	
Plate 225, issued 1879-80				20	0	5		0	

These values become the more surprising when one remembers that the quantity of red penny English stamps used for postage ran into a matter of some eighty millions. The prices realised for some of the higher-value English stamps are still more startling; but I think for one issue of *Hobbies* I have already devoted enough space to this particular section of Philately.

—:O:—

It was only to be expected that among the thousands who are lending *Hobbies* their cheerful support as "constant readers" there would be a large number of Philatelic novices, very young



stamp collectors who do not yet "know the ropes" of scientific Philately. For the benefit of such neophytes it will be as well, I think, to give each week a certain amount of elementary matter under a distinct heading. Next week I shall open this feature with some facts about that all-important subject, "Perforations." The perforation, or as we Philatelists call it, the "perf," of a stamp so often means a great difference in the values of stamps that are otherwise exactly similar, that it is a most important branch of Philatelic education.

—:o:—

The usefulness of the Society for the Suppression of Speculative Stamps becomes rapidly more apparent. A further circular from this go-ahead Society throws the fierce light of publicity upon a little Philatelic "job" that is being quietly perpetrated by the postal authorities of a British Colony—New South Wales to wit. The Governor of New South Wales has announced that a large quantity of postage stamps bearing the official surcharge, "O.S.," will be offered *for sale to stamp collectors and others!*—the "O.S." stamps having been declared obsolete on January 1st, 1895. Were the stamps genuine originals sold in a perfectly straightforward way, no one could reasonably utter a word of protest; but it has been ascertained that they are rubbishy reprints faked up to supply a fancied Philatelic need. What makes the thing still more flagrant is the fact that the stamps are surcharged with an elliptical obliteration mark, enclosing the letters "N.S.W.," this being added with the idea of making the stamps appear to be postally used. I must warn the readers of *Hobbies* to be on their guard against these Government reprints with spurious postmarks.

—:o:—

NEW ISSUES OF STAMPS.

*. Items for this department will be gratefully received from any Philatelic readers who happen to receive early information of new issues, or of impending changes in the postal arrangements of any country.

BRITISH CENTRAL AFRICA will henceforth be represented by stamps which, if rumour speaks truly, have been designed by no less a person than Mr. H. H. Johnston, her Majesty's Commissioner in that territory. The values extend from ½d. up to £10. What a £10 stamp is doing in British Central Africa goodness only knows. The design illustrates two natives leaning against a shield, and does not reflect any great credit upon its alleged author.

PERU.—In commemoration of the triumph of the people over the military dictatorship of General Caceras, Peru has gone in for a special set of stamps issued to the public on one day only—September 10. The stamps are of the following designs:—

The one, two, five, and ten cent. stamps have a figure of Liberty seated and facing to the right. Her right hand rests on the upper edge of a shield emblazoned with the sun, and in her left hand is a spear surmounted by a Phrygian cap. A little to the right is a column, on which is a laurel wreath. This is framed in an ornamental border, in the upper part of which is the name "Peru," and in the lower the word "Franqueo." On the upper part of the stamp is the legend "Union Postal Universal," and at

the bottom the value. On either side are the dates "Marzo 17 de 1895," and "Setiembre 10 de 1895." March 17 was the date of the battle of Lima, which completed the overthrow of Caceras. The same description applies to the 20 and 50 cent. and to the one-sol stamps, save that they are larger and that the figure of Liberty is in an oval composed of laurel and olive branches.

TRANSVAAL has also indulged in a "Commemoration" stamp, which is denounced as speculative by the latest circular of the S.S.S.S. It is a large oblong label, of much the same shape and kind as the U.S. Columbus stamps, except that the printing is abominably inferior. The stamp is a penny one, and a million and a half were issued to the public, the number being exhausted in three hours. South African cablegrams state that the price of the stamp among the Philatelists of that quarter of the globe has risen to 1s. 6d.

AUCTION SALES OF STAMPS.

The season for auction sales of scarce foreign stamps has now fairly set in. Below I give a list of the more notable lots sold in the sales already held at the various London resorts. An asterisk (*) is intended to indicate "unused."

		£	s.	d.
*	British Guiana, 1862, 1c. pink	18	18	0
*	" " " " 2c. yellow	9	5	0
*	" " " " 4c. blue	13	0	0
	Canada, 6d. purple, imperfect	13	10	0
*	" " 7½d. green, imperfect	11	0	0
*	" " 10d. blue	11	0	0
	Ceylon, 1s. first issue	21	10	0
	Mauritius, block of four 2d. "Post Paid" ...	210	0	0
	New Brunswick, 1s. mauve	26	0	0
	Nova Scotia, 1s. violet	19	10	0
*	Nevis, 4d. rose	9	0	0
	Newfoundland, 1s. vermilion	28	0	0

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HISTORICAL POSTAGE STAMPS.—A correspondent of the *Daily Chronicle* suggests that the time has come when England should follow the example set by Postmaster-General Wanamaker, of the United States, during the Columbian anniversary, of putting a series of historical pictures on the postage stamps. The following are suggested as suitable for a series of British stamps:—The landing of Julius Cæsar, the preaching of Christianity by St. Augustine, the withdrawal of the Roman troops, the invasions of the Danes, Saxons, and Normans, the granting of Magna Charta, the Wars of the Roses, the Spanish Armada, beginning of the occupation of India, the Stuart succession, the beheading of Charles, capture of Jamaica, the Restoration, settlement of Pennsylvania, the rule of William and Mary, the introduction of the Hanoverians, the conquest of Canada, Captain Cook circumnavigates the world, union of Great Britain and Ireland, Battle of Trafalgar, Battle of Waterloo, slavery abolished, first steam railroad, first steamship across the Atlantic, Electric telegraph, penny postage, London Board school opened, Queen proclaimed Empress of India.



.. FRETWORKING ..

SCROLL-SAWING, INLAY AND OVERLAYING

CHAP. III.—DESIGNS,—THEIR CHARACTER.

FRETWORK Patterns are now so numerous and so varied in style that no amateur need be at a loss to find something to suit him. Almost every variety of article may be had, from simple Brackets and Photograph Frames to Models of well-known Buildings and elaborate pieces of Furniture. Not that every Pattern is an artistic success.

Far from it; but at the same time it is safe to say that there are many in the market which are not only designed with great taste, but are well adapted—from every practical point of view—to the purposes for which they are intended.

It is now quite possible to purchase Designs which do not bear the stamp of the mere amateur Artist, and the executed models of which would offer no insult to a library or drawing-room. Naturally, with all Patterns much depends on the Fretworker, on the wood he selects, and on the general finish of the article. But with the superior tools now obtainable, and the excellence of wood, the amateur has little excuse for spoiling his work.

When any reader makes a selection of Designs, he is strongly urged to pass over the numerous old-fashioned commonplace Patterns, and to choose something which bears at least some character. By *character* is not necessarily meant a Design in some regular classic or modern style. Many floral Designs may be striking in character, and flowers lay claim to internationality. Some Patterns on the other hand—presumably in certain *styles*—lack all character and spirit whatever, and are consequently worthless.

In selecting Designs, remember also that mere novelty is not everything. So-called novelties—however original—are often but curiosities of the moment. Originality in Design is certainly a most important feature, but is altogether a lifeless virtue unless it can be represented with grace and spirit. From miniatures it is not always possible to ascertain the true merits of a Pattern, but the general character can usually be judged, and a fair idea of its outline and style determined.

SPIRIT IN DESIGN.

In cutting out a Pattern, what should be constantly held in view is the *spirit* of the

Design. There are those who would tell us that there is no such thing as spirit in Fretwork; that it is a purely mechanical process, requiring a little care, but nothing else. This suggestion should be repudiated. Fretwork as an Art may always have to take a lower place than Carving, but it is much more than mere mechanism. Let its detractors allege what they please, but Fretwork is still a genuine Art; and those who have had experience in it, can give the assurance that *spirit* acts as a great factor in the work.

In speaking of this, however, it must be remembered that many Designs truly lack all spirit, while others—if they ever happened to possess any—have lost it in the process of reproduction. With regard to this, it can only be said, when the Pattern *has* character, preserve what character and spirit there is. This can only be done by keeping a jealous eye on the general outline of the Design. For instance, in sawing the interior portion of



Fig. 4.

Fig. 4, five out of every six Fretworkers will look merely at the one-sided fact that all they have to do is to cut out a piece of wood the shape of Fig. 5. This no doubt is true. The piece eventually sawn out will certainly form such a shape, but this is a mere incidental fact, and is



Fig. 5.

quite unimportant. When the saw blade runs along the pattern line, the eye should rest on what is *outside* that line, and not on what is *inside*.

Again, where two circles intersect, as shown in Fig. 6, when the saw comes to the angle A, it is not so necessary to realize that the line takes

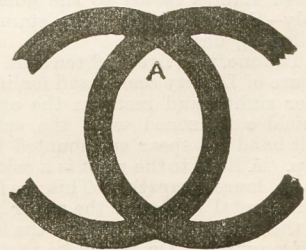


Fig. 6.



A

the form of a Gothic arch, as to recollect that it is actually the part of a circle, and that the circular idea must be borne in mind. The general advice on the matter is—watch what is being left in, not what is being cut out.

Sometimes accidents in reproduction are more than usually serious, and render portions of a Pattern very obscure. Figures 7 and 8 illustrate a case in point. Printing errors do not often excel this example, but they frequently equal it.

When Diagrams are unfortunately difficult to trace, either through careless drawing or faulty printing, do not cut at random. Never saw out even the smallest chip, if the meaning cannot be understood. Try to make the Pattern clear with the pencil, and if it finally baffles comprehension, return it to the publishers and ask them what this or that part means—whether what looks like a one-winged quadruped is a bird or a beast, and whether this blotch

which seems to grow out from the tip of a leaf is a flower or a butterfly, or what? Of course the matter must be looked at reasonably. Foliated Ornament can occasionally be used conventionally, and it is quite permissible to introduce Griffins and other grotesque figures, although they may represent neither man nor beast—at least in this world. What is referred to is an instance where the *intention or motive* is not clear, where the Diagram has got blurred, and the true meaning of the Design become obscured.

FIGURE SUBJECTS.

With Patterns where Figure subjects are introduced, any obscurity is very serious unless

the Fretworker has a fair knowledge of drawing. Still, even in the absence of this acquirement, there may be some friend who can set matters right, and make them a little clearer with his pencil. Figures and Animals which are treated conventionally will give less trouble than those which are intended to be life-like representations. Thus, in the case of some weird supernatural form, with a human head, a beast's trunk, a serpent's tail, a Dragon's wings, and sundry demoniacal accessories, we may occasionally be entitled to take a little

freedom of action. Critics will not know exactly what sort of animal shape has been cut, and—lest ignorance should bring them to grief—will be rather more reserved in their comments. But if the subject is supposed to be true to Nature, to be the likeness of a human being, or a horse, or a bird, or indeed anything which anyone and everyone knows something about, it must be seen that the Diagram is correct before beginning to saw. Even then the work must be taken slowly.

However easy it may be to draw a beautiful lady's face on paper (and it is not so very simple) it is a different question when it comes to cutting out the profile in wood. Only the finest Saw blades should be used, as delicate feminine features can very easily be made as unattractive as those of a pug dog.

As it is intended at a later stage to devote a chapter to Silhouette cutting, the matter of Figures need not be dwelt on here. It should be borne in mind, however, that subjects which represent actual animal life cannot permit of being trifled with, but must be treated throughout with the greatest possible care.

(To be continued.)

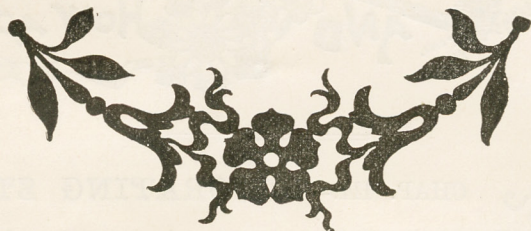


FIG. 7. Original Drawing.



FIG. 8. Printed Pattern.

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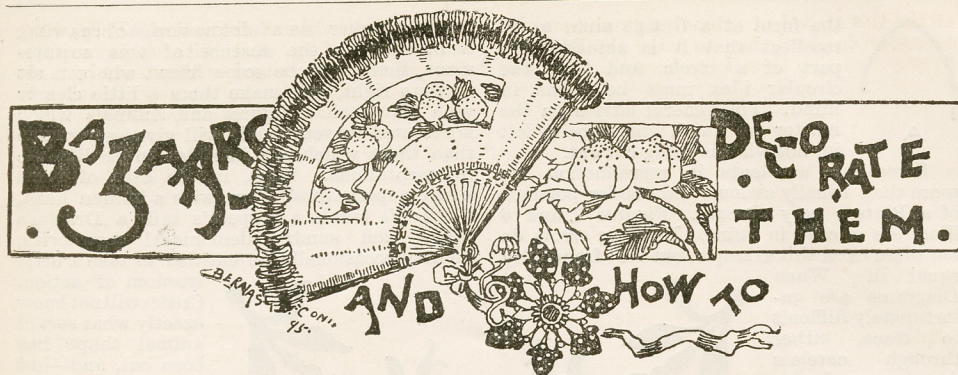


If you want anything, however small, state requirements or send for Catalogues.

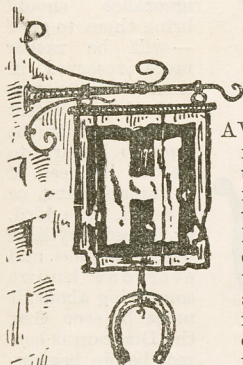
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CHAP. III.—DECORATING STALLS.



HAVING made all preliminary arrangements for the Bazaar, the next matter to consider is the style of decoration. Here so much depends on the amount of money to be spent that a writer on the subject is somewhat handicapped when he tries to offer suggestions. If it is expected that the Bazaar will realize a large sum, then it is desirable to have attractive decorations, and it is quite permissible to go to some little expense in doing this. A well ornamented Hall is one of the best advertisements for a Bazaar, and if wide and influential patronage is anticipated it is worth while to fit up the decorations in a liberal, though not necessarily in an extravagant, style.

If, on the other hand, the Bazaar has been organised within a narrow circle, and for a less popular object, the sum expended on decorations should naturally be smaller. At the same time it is a serious mistake to arrange Stalls in a poverty-stricken fashion, and with simple drapery and Art muslin any Bazaar may be tastefully ornamented at a very small cost.

With ordinary Bazaars it is impossible to do much in the general decoration of the building itself, and attention should chiefly be paid to the Stalls. Suggestions as to simple and elaborate methods of Hall decoration will be given afterwards, but meanwhile it will be more serviceable to deal with the Stalls alone.

In the first place it is necessary to procure some framework. Stall frames are easily constructed, and an advantage is that the same one is equally well adapted for plain or elaborate ornamentation.

Fig. 1 indicates what in reality is at once the simplest and best skeleton for a Stall frame. The wood-work throughout is two inches by two inches, and the most satisfactory method for fixing the

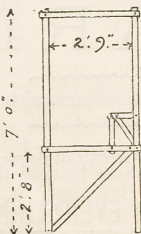


Fig. 1.

joints is by a tongue and groove as shewn in Fig. 2. Stalls are usually twelve feet in



Fig. 2.

length, and three of these frames are necessary for each. Six foot Stalls are also used, and for these only two skeleton uprights are required. A couple of posts join these at the top, and the table is formed by laying three boards, eleven inches wide and an inch thick, on the cross bars provided for them. The table top may be about thirty-three inches from the floor. At the back of the Stall should be a shelf, about twelve inches from the table, and of any suitable width.

It must not be imagined that these hints are thrown out as mere inspirations of the moment. The writer has employed these frames hundreds of times at Bazaars and Fancy Fairs, and strongly recommends them as the best and cheapest which can be made.

A number of simple tressles such as Fig. 3 should be hired. These are practically indispensable; they are used for supporting the framework, and may also be wanted for endless other matters. Three should be used for every Stall twelve feet long, and two for the shorter ones.

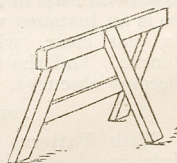


Fig. 3.

When the Stalls are arranged as usual on each side of the room, a space of at least two feet should be left between them so that it may be possible to get behind. Here it may be remarked that a frequent subject of discussion is whether the Stall holders should serve in front of their respective Stalls, or behind. Many ladies appear to be under the impression that, because shop assistants invariably serve from behind counters, it should be the same at Bazaars. This, however, is quite a mistake. At Bazaars visitors do not always walk up to a Stall with the fixed intention of purchasing a certain article as they do in some ordinary shop. They require to be canvassed, coaxed, urged, and finally compelled to buy something or other. This is the Stall holder's task. The lady who stays behind her Stall and calmly

awaits the arrival of intending purchasers will certainly do much less to make the Bazaar a financial success than her energetic neighbour who stands in front and button-holes every passer-by. Another argument in favour of the latter plan is that the backs of Stalls require to be used for storing goods. No other convenient place can well be found, and in such a position articles are readily accessible.

Behind one of the Stalls a small private corner should be reserved, where the Committee members and other officials can have a quiet cup of tea (or glass of champagne!) without having to go to the Refreshment Stall. This will be found a great convenience, as there is hardly anything so tiring to ladies as keeping Stalls at Bazaars.

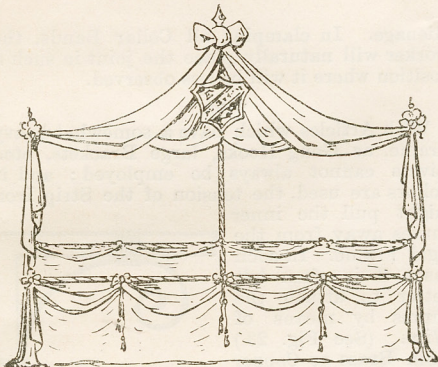


FIG. 4.

When the size and position of the Stalls have been settled, the decoration must be considered. Fig. 4 suggests one of the simplest arrangements of drapery. The Stall here is twelve feet long, with three of the skeleton frames which have just been described. The only additional piece of wood-work required is an upright rod about four feet high, which is fixed to the front post of the centre frame, and used for attaching the drapery to. Such an arrangement as this is always effective, provided that a harmonious selection of colour has been made. It is useless to describe the drapery itself. The sketch, although merely in outline, is self-explanatory, and the ladies of the Committee may safely be trusted to arrange whatever material is at their disposal in an artistic and attractive manner.

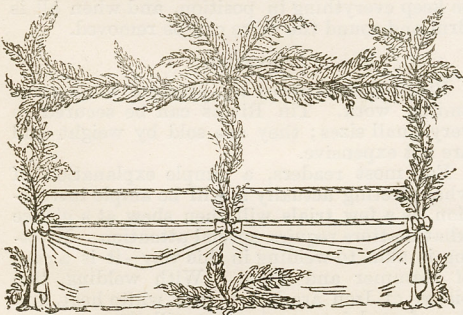


FIG. 5 is a style of decoration which is only suitable for a one or two days' Exhibition, as the ferns with which it is ornamented would soon wither. For a single-day Bazaar nothing

is better than a floral decoration. Ferns have a beautiful effect, and with some suitable drapery a Stall arranged as shewn can be made very handsome. Care must always be taken to see that the wood-work is completely hidden.

An economical and effective decoration can be secured by tacking or pasting brown paper to the framework, and painting it in distemper. This method can be carried to almost any degree of elaboration. A more expensive plan is to stretch canvas on the frames, but when the decoration is only required for one Bazaar, brown paper will be found sufficient.

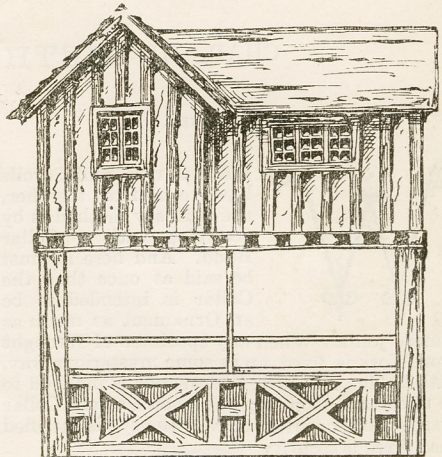


FIG. 6.

Fig. 6 is an instance where this method is tried. The sketch is purely suggestive, and is only intended to show the principle. On the top of the ordinary Stall is built an extra framework, which should be as light as possible. The frame must be adapted to the style of building which it is desired to represent. Imitations of old-fashioned houses are very popular, and with a little ingenuity a good representation may be produced. Any carpenter could set up the framework, and tacking on the brown paper might be undertaken by the Stall holders themselves. To paint in distemper requires a little skill, but the amateur artist who is within the circle of officials could surely do it without difficulty. In the absence of this useful individual, strips of white or coloured paper might be glued to the brown sheets, and thus made to carry out the same effect.

This system of decoration will be more fully treated in another chapter, but it may be seen that with common brown paper and ordinary distemper colours much more can be done than one would readily imagine.

When the Stall is put up and decorated to satisfaction the top should be covered with white calico. Many prefer to cover the sides and back similarly, and this plan serves a double purpose, as it not only helps to keep the dust off, but provides a useful background on which a few light articles may be hung.

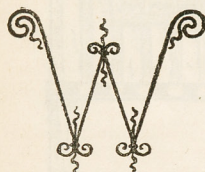
Every Stall holder should be furnished with a hammer, tacks, and plenty of pins. Such advice seems superfluous, but these small commodities are too often forgotten, and at Bazaars they cannot be dispensed with.

(To be continued.)

BENT IRON WORK

CHAP. III.—METHODS OF FIXING.

COLLAR BANDS.



WHEN Curves and Scrolls have to be fixed together, the ordinary method is by clamping with a Collar Band. And here it must be said at once that the Collar is intended to be an Ornament as much as a mere joint. When any specimen of Wrought Iron Work is fixed up in some mysterious way, with hidden Rivets or Screws, one is inclined to be uncertain about it; but when a strong Collar grasps the tangential curves, the eye is satisfied that there is security and stability in the Article. A Bent Iron Ornament stud-ded over with Brass Collars looks extremely well; but in the meantime only the ordinary Iron or Tin clamp is to be dealt with.

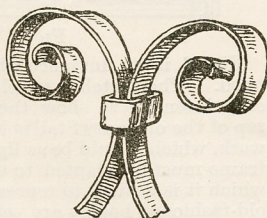


Fig. 20.

Fig. 20 will afford a better definition of what a Collar Band is than any words, and there can be no necessity for supplying a conventional description.

Strip Iron for a Collar should never be wider than that which is being used for the curve; it should in fact be less. Except when the Ornament is very large, strips of one-eighth or three-sixteenths inch should be used for clamping. If however the worker is employing half-inch material for the Article, Collars must be about three-eighths inch wide.

To bend the Collar round the scroll is a simple matter. The Iron may be cut so that the two ends shall meet, as in Fig. 21, or one end may overlap, as in Fig. 22. In this latter case extra neatness is required, or the joint will look clumsy and unfinished. A firm pinch with



Fig. 21.



Fig. 22.

the large heavy Pliers will fix the clamp, but if the Vice can be used and screwed up tightly it is very much better.

Many odd moments could be well spent in making a number of Collar Bands, as considerable trouble will thus be saved when the Article comes to be put together.

With light work, strips of Tin will be found more convenient for Collars. They are easily cut and bent, and the Black Paint conceals their

alienage. In clamping all Collar Bands, the worker will naturally place the joint in such a position where it will be less observed.

WIRE.

With Articles which have a somewhat heavy Frame, as Gong Hooks, large Brackets, etc., Rivets cannot always be employed; and if Collars are used, the tension of the Strip Iron might pull the inner curves away from the rigid Frame. In such cases, it is often felt better to attach the curves by means of Wire. (See Fig. 23.) Thin Brass or Copper Wire is most suitable for this, and it must be strung tightly, — not with the hand, but with two pairs of Pliers.

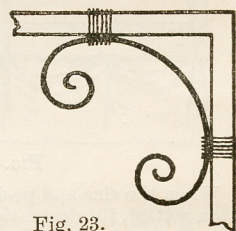


Fig. 23.

There must be no crossing and re-crossing, but the Wire should be wrapped round the Frame as closely and neatly as thread is rolled to a reel. The ends should be carefully stowed away out of sight.

It must be granted that fixing by Wire is perhaps less in accordance with recognized methods of Iron Work than clamping or riveting, but it is frequently adopted in good examples, and is acknowledged to be perfectly legitimate.

With Bent Iron Ornaments, it is sometimes a good plan to bind all the scrolls roughly with Wire before applying the Collars. This helps to keep everything in position, and when all is firm and sound the Wire can be removed.

RIVETING.

Riveting introduces the amateur to genuine smithy work. Tin Rivets can be secured in very small sizes; they are sold by weight and are not expensive.

For most readers, a simple explanation of what riveting actually is will be ample instruction, as a few trials will then shew at a glance what matters require special attention. Riveting is akin to welding in this way—it is a case of Hammer and Anvil. With welding, two pieces of Iron are blown to a white heat, and then forged into each other till they are one. With riveting, the two pieces are united by driving a small Tin or Copper bolt through them, and hammering away till it is literally part of the Iron. If it be desired, for instance,

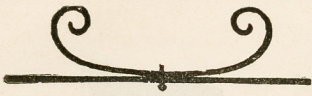


Fig. 24.

to join the curve and the strip of Fig. 24 by means of a Rivet, take each bit of Iron, lay it on a board of hard wood, and drive a hole through it by the aid of a Hammer and Brad-awl. The holes should be just large enough to admit the Rivet. If they are roughly bored, they should be dressed by filing, and then trimmed with the Marking-awl or Rimer. Insert the bolt, head downwards, and lay the strips in their proper position on the Anvil. Hold them with the heavy Pliers — not with the hand lest a few fingers be lost — and proceed to hammer. Beat the Rivet till the strips of Iron are inseparably joined. Do not batter recklessly; note each blow, and see that the bolt is filling up the holes, and is forming a small stud-head above and below. The work may not be done to complete satisfaction at the first attempt, but a few trials will produce a good result. Should the Hammer fail to do its duty to perfection, any slight faults may afterwards be remedied by touching up with a file.

BOLTS AND NUTS.

Bolts and Nuts are chiefly used when Sheet Iron or Copper is being employed, but may sometimes be wanted in cases where strips cross each other at right angles. Only very small sizes should be used. The method of fixing hardly calls for any description; drill two holes and insert the bolt, holding the head with a Screw-driver; tighten the Nut with the aid of a small Wrench, or a pair of Pincers, — whichever can be used more conveniently. If the stalk of the Bolt projects too far it may be filed off.



Fig. 25.

SOLDERING AND BRAZING.

Soldering is such a useful accomplishment that even those who do not attempt Bent Iron Work should know how it is done. Place the Soldering-bolt in the fire till it is well heated — though not quite *red*. Then sprinkle a little ground resin over the joint which has to be fixed; pick out a piece of Solder with the hot Iron and apply quickly but carefully, guiding the molten lead well into the most suitable spaces.

Brazing is similar in operation, but is done with Brass and Zinc, instead of with the leaden composition.

Strong heavy Iron work should be brazed, but soldering will be found quite sufficient for ordinary light Articles. In Ornaments, where there are an endless number of small curves and scrolls, it is tiresome to make Collar Bands for all; and indeed the effect is very unpleasant. In such cases employ Collars where they are absolutely necessary — not only for strength, but for appearance; at other points of contact a touch of Solder will be found ample. For small neat work, an easy plan is to apply the resin, lay a grain of Solder in the joint, and hold the Article for a few moments in the gas flame till the metal fuses and does its work. If preferred, a glass tube could be used to *blow* the flame on to the joint; it is of course hardly worth while going to the expense of purchasing a Bunsen burner, or a lamp and blow-pipe. In soldering, if the metal spreads too much, it must afterwards be removed by using a file.

(To be continued.)

Items of Interest.

£12,000 FOR A PHOTOGRAPHIC OUTFIT.—It is stated that the Photographic Outfit of the Duke of Morny, the leading amateur photographer in France, cost twelve thousand pounds.

ALUMINIUM FOR TEETH.—For a number of years dentists have unsuccessfully experimented with Aluminium, but it has now been discovered that teeth can safely be stopped with this metal.

THE GERMAN POST OFFICE AND CYCLES.—A new second post has been established in Berlin by which letters are delivered within the city at a cost of a little over a farthing. Boys in uniform on tricycles effect the distribution.

AUTO-MOBILE CARRIAGES.—A genuine horseless carriage has at last been invented, and was recently exhibited at Tunbridge Wells. One of these carriages can be driven for five or six hours, at a cost of about one halfpenny per hour, all the fuel required being either gasoline or rectified petroleum.

ACETYLENE.—This is the latest illuminant, and it appears to be a most brilliant one. In Canada a producer has offered to supply Montreal and Toronto with Acetylene at fifty cents. per 1000 feet. For photographic work the new light will prove of great service, not only directly, but also for reproduction by photo-mechanical processes.

THE TELEGRAPH IN TURKEY.—The Turkish people have for long set their faces sternly against the Telegraph, but recently the Sultan has instructed the Ministry of Marine to conduct a series of experiments with electrical projectors. The Telephone is still forbidden, but this Telegraphic concession will certainly open up the way for Electrical Science in the East.

A SMALL CIRCULAR SAW.—Perhaps the smallest Circular Saw in the world which is used for practical purposes is one employed in pen factories for making the slits in gold pen points. The Saw disc is less than one inch in diameter; it is no thicker than ordinary paper, but is made of the hardest steel. When at work it gives about four thousand revolutions in the minute.

A HOBBY FOR THE BLIND.—Massage is practised almost exclusively by blind persons in Japan. At St. Petersburg also the occupation is greatly run upon by those who have lost their vision, and the Professor at the Massage School there is a blind man. Blind Masseurs have a decided advantage over others in such an occupation, as their sense of touch is much more delicate.

THE FIRST AND LAST LADY CYCLIST.—The first Russian lady cyclist, who was a fortnight ago authorised officially to ride in the streets of St. Petersburg, has come to grief by falling from her machine, and injuring herself so badly that she is now in the hospital. This accident means that cycling by ladies in Russia is doomed. The police will issue no more permits to women, as the force holds itself responsible for all accidents not caused by its agents.



CHAP. III.—INCANDESCENT GASLIGHTING FOR THE LANTERN.



LAST week we showed very conclusively that the Incandescent Gas Burner applied to the Magic or Optical Lantern had proved, in the hands of certainly one well-known worker, to give excellent results. It is quite possible with a very small amount of ingenuity to rig up the Welsbach burner in any Lantern, but the system has so far become popular that special jets have been invented. The first and simplest is shewn in Fig. 1, and is made by Messrs. W. Butcher & Son, of Blackheath. It is designed specially to support the Welsbach burner in the "jet tray," supplied with all ordinary limelight Lanterns. The metal upright with thumb screw slides on a pin which is fitted to the end of every tray to carry the jet for limelight. The pin and tube permit of raising and lowering the burner, whilst the tray which works in two grooves at the bottom of the Lantern provides for the burner to be adjusted to the right distance from the condenser. Gas is supplied by an india-rubber tube, and the provisions already named make the centreing of the light as easy or even easier than when using either oil or limelight. We shall be pleased to give any further information of this, the simplest form of attachment. Special cowls are supplied for Lanterns fitted for the Incandescent Gas Burners.

The same firm have made a special Lantern for the Incandescent Gas Burner; in this

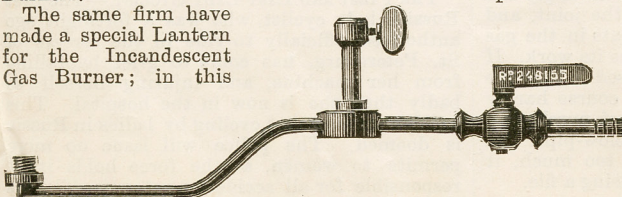


Fig. 1.

Lantern the chimney or cowl is so arranged as to prevent any leakage of light.

In Fig. 2 we have a sectional view of the Incandescent Gas Burner as designed by Mr. B. Bentham Dickenson, of Rugby. It will be noticed that the tray is so designed as to

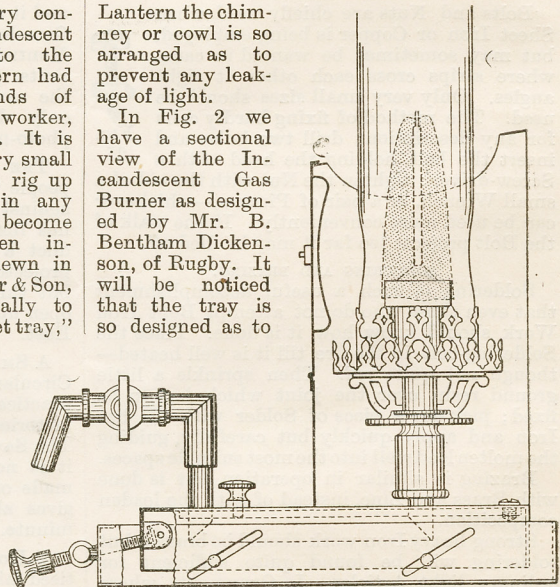


Fig. 2.—Lamp for Burning Gas.

permit of the burner being raised and centred by means of rack and pinion, with hood, reflector, and chimney. So complete are the arrangements that with this lamp a well-illuminated disc, 9 ft. in diameter, can be relied upon. Messrs. Geo. Philip & Sons, whose name we have before mentioned, are the makers of Mr. Dickenson's Incandescent Gas Lamp.

THE LIMELIGHT.

It will be well to preface our remarks upon the Limelight Lantern by giving some brief account of the manufacture of oxygen gas, which, in conjunction with hydrogen, or the

ordinary coal gas of commerce, is used to produce what is popularly termed the limelight. Oxygen gas was discovered as long ago as 1774 by Priestley, and he obtained it by heating mercuric oxide in a flask. This substance, when so heated, breaks into mercury vapour and oxygen gas. It will be quite apparent that such a method is quite out of the question when several feet of gas are needed for admixture with hydrogen for the limelight. Another process, which is not much used, although it has been adopted on a commercial scale for manufacturing oxygen, is dependent upon the action of cobalt upon bleaching powder, but the far more general method of preparation is by the decomposition of chlorate of potash, and a short description of manufacture, which can be done at home, will not be out of place.

The apparatus need not be expensive, but the articles required will be a retort, which may be made of sheet iron with a strong bottom, convex in shape. At the top of the retort there must be a branch pipe to carry off the gas as fast as it is generated to a purifier or wash bottle, and from thence into the bag. A gas stove will be needed, and upon this the retort will be set. The wash-bottle or purifier should consist of a tin vessel half filled with water, to which should be fixed two pipes. One of these will reach nearly to the bottom of the vessel, and will be the inlet. The other pipe is in the top or cover of the purifier, and should be connected up to the india-rubber bag or other receiver. The purifier must be gastight.

The plant having been set up, the process of manufacture may be commenced. Chlorate of potash consists of—Chlorine, 35.5 parts; potassium, 39.1 parts, and oxygen, 48 parts. On the application of heat the whole of the oxygen is given off and is collected; the residue after the gas has been evolved is useless. It is not practicable to recover the oxygen from the chlorate of potash without another agent. A very general mixture for the purpose is—

Chlorate of Potash	2 lbs.
Manganese Oxide	$\frac{1}{2}$ lb.
Salt (common)	6 ozs.

These ingredients are carefully mixed before the gas is required, and if the potash is not powdered it should be carefully crushed or broken. The manganese should be in a fine powder, and all foreign matter—bits of wood, straw or paper—should be carefully eliminated before the mixture is placed in the retort. The application of heat should be very gradual. The retort, we will presume, has now been charged. The evolution of gas will at first be very slow, but it will require watching or the gas will come with a rush. As soon as the gas is heard bubbling through the water in the purifier, it may be allowed to run to waste for a few minutes, as it is highly charged with air. To test the gas as it issues from the purifier hold the smouldering end of a match, and if the match burst into flame the gas is coming off fit for use, and the outlet pipe of the purifier may be connected to the bag. Oxygen gas, made as described, contains a considerable quantity of chlorine, which, if allowed to pass with the gas into the bags, and so on, through the brass tubes, taps, and jets will rapidly destroy not only these but the bags. The water in the purifier removes a certain quantity of chlorine, but does

not eliminate it entirely. To absorb the chlorine, common washing soda (sodic carbonate) or salt of tartar (potassic carbonate) may be dissolved in the water; but in order to perfectly neutralize the chlorine, caustic soda is recommended. Lewis Wright, in his admirable book "Optical Projection," says with caustic soda the solution may be used several times, if at hand; the quantity is not very material, using say a couple of sticks of the caustic soda to a Winchester quart bottle. *One washing is not, however, enough*; two purifiers are necessary to get really pure gas. In this case the delivery pipe of the first purifier is connected with the inlet pipe of the second.

We have referred several times to the "bag" or receiver. The best bags are made of unvulcanised india-rubber, covered on the outside with twill or a kind of sail cloth, and on the inner side with coarse canvas. This canvas serves a double purpose—gives strength to the bag and prevents the inner sides adhering together when the bag is put away empty. These bags are furnished with a brass tap, which should be of large bore, preferably with lever handle, as the presence of chlorine, although only in small quantities, has a tendency to set the plug and make it difficult to turn. This plug should be taken out and greased occasionally, care being exercised in even this trifling detail, in order that no excess of fatty matter should be left upon the plug or get into the bag or connections. Gas bags are wedge shaped, and should be placed between two boards, upon which weights can be laid in order to give the requisite pressure when the gas is being used. The amount of weight upon the boards is governed to some extent by the size of the disc required. One eminent authority says:—"Using a disc of from 15 to 18 feet in diameter the exhibitor will do well to commence, when the bags are full, with two half hundredweights; but when the gas has been so much used that the upper board gets nearly horizontal, the pressure will be lessened and the light will suffer to some extent. When this happens the experienced operator will place another half hundredweight in position, and the increased brightness of the picture will quickly show the advantage of so doing."

It is not necessary, except in isolated places where no coal gas is to be obtained, to have hydrogen gas in bags. The pressure given by the ordinary supply of house gas is sufficient for the purpose.

There are, as will be gathered from a perusal of the above, no great difficulties to be overcome in the manufacture of oxygen gas, and many readers of *Hobbies* may like to try their "prentis' hand," in which case we shall be pleased to send them further particulars and give working sketches of retorts, gas burners, purifiers, connections, the arrangements of pressure boards, &c., &c.

Our next chapter will be devoted to the manufacture and practical application of compressed gases for Lantern illumination.

(To be continued.)

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TOBACCONISTS COMMENCING. See Illd. Guide & Catalogue (250 pgs.) 3d. "How to open a Cigar Store, £20 to £3,000."—Tobacconists' Outfitting Co. (Reg.), 186, Euston Rd., London. N.B.—Shopfitters and sh. wease makers for all trades. (Over 50 years' reputation). Mg., H. Myers.

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AN ENCOURAGING RECEPTION FOR *HOBBIES*.

It has formed no part of our plan for the conduct of *Hobbies* to take up for editorial remarks space which might be devoted to more practical and profitable purposes. We feel, however, compelled to frankly and very gratefully acknowledge the many appreciative letters which we have received during the past few days. It would be but false humility on our part to conceal the fact that we anticipated for *Hobbies* a cordial reception. The Paper aims at covering a ground of which barely the fringe has hitherto been touched, and we feel that it would, on its merits, be entitled to a considerable measure of success. What we did not anticipate was so early an expression of widespread and unequivocal approval. The demand for the early numbers of *Hobbies* has far exceeded our most sanguine expectations, nor did we dream of receiving such a flood of kindly congratulations upon the general scheme of the Paper, and the manner in which it is being carried out. It would be difficult to exaggerate the value to us of such encouraging letters, and as it would be impossible to answer them all separately, we gladly take advantage of this opportunity to thank sincerely all who have so kindly assured us of their approval of our objects.

The letters we are glad to say have not been devoid of friendly criticism, and numerous suggestions have been made which shall have our full and careful consideration. It is our earnest hope that our readers will not deny us the advantage of any ideas which may occur to them for adding to the interest and usefulness of the Paper. It may not be always true that "in the multitude of counsellors there is wisdom," but certainly nothing but good can arise from the conductors of such a Paper as *Hobbies* being kept constantly and fully acquainted with the views and requirements of those who read it. It will possibly not always be practicable to give effect to the suggestions that may be offered, but it is we are sure unnecessary to say that impartial consideration will always be given to the opinions of our readers, and that we shall gladly adopt any proposals which promise to increase the usefulness and popularity of *Hobbies*.

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It might, however, be urged by some that these Presentation Designs, although they possess an undoubted market value, appeal more especially to the followers of the particular hobby with which they are related. We recognise the force of this contention, and we have therefore gone a step further still. We have completed arrangements which will enable us to present with every copy of *Hobbies*, what, to all intents and purposes, is a **Cash Bonus of Threepence**. Every one of our subscribers will, in consequence, obtain in future at least **SEVEN TIMES** the value of his weekly Penny! The natural impulse of the reader of this statement will be to declare that the offer is on the face of it absurd; or that, even if it were possible for a few weeks in order to draw attention to a new paper, its continuance would necessarily entail the ruin of those responsible for it. A little consideration, however, will show that the impossibility is apparent rather than real, and although we intend our offer to be an absolutely permanent one, we neither propose nor expect that *Hobbies* shall be produced without bringing a profit to its promoters. In reality, what we propose is by a kind of co-operative arrangement between ourselves, our readers, and the firms whose advertisements appear in our pages, to enable the purchasers of *Hobbies* to secure a share of the financial advantages which accrue from the production of a popular and successful weekly paper. The first essential for the success of such a paper is of course a very large circulation. Any method by which this circulation may be genuinely increased is of advantage to the Proprietors, because it secures a proportionate reduction in the cost of producing the paper; to the Readers, because the greater success of the

journal enables its managers to incur any reasonable expense necessary to give it additional interest and value; and to the Advertisers, because they are enabled to place their weekly announcements before the eyes of a larger number of prospective purchasers.

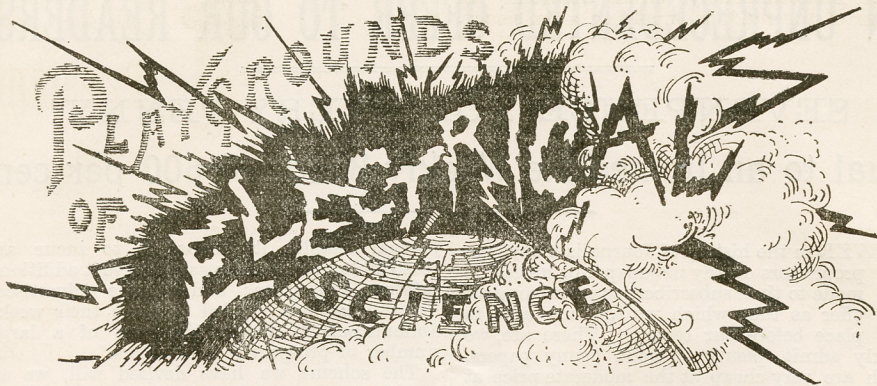
The scheme we have devised will, we are confident, accomplish all three of these objects; while, as we have already intimated, it will also give to every purchaser of *Hobbies* what will be practically a cash bonus of threepence. Every copy of our Weekly Presentation Supplement will in future contain a Coupon which, by special arrangement with our Advertisers, will, under the conditions to be detailed, be accepted by the Firms whose names will be printed on the back of the Supplement, as an equivalent of Threepence in Cash. The Coupons will be numbered and dated, and each one will remain good for three months. The Coupons will be accepted in payment not only for any articles specifically mentioned in the advertisements in our pages, but for any goods sold by the Firms who have agreed to take them. The one condition of any importance is that not more than five per cent. of the amount of any one order shall be paid in Coupons. For example, if it be desired to purchase goods to the value of 5/-, it would be sufficient to send a postal order for 4/9 and one Coupon; if the bill came to 10/, two Coupons and a postal order for 9/6 would be required; and if the amount were 20/, a postal order for 19/- and four Coupons would need to be sent. Should less than five shillings worth of goods be required, the sender of a Coupon will be entitled to a discount of one halfpenny for every shilling. The scheme will come into operation next week, and the following table shows clearly how it will work.

TABLE SHEWING SYSTEM OF DISCOUNT.

Value of Goods purchased.	Cash to be sent.	Coupons to be sent.
1/- ..	11½d.	.. 1
2/- ..	1/11	.. 1
3/- ..	2/10½	.. 1
4/- ..	3/10	.. 1
5/- ..	4/9	.. 1
10/- ..	9/6	.. 2
15/- ..	14/3	.. 3
20/- ..	19/-	.. 4

For amounts of over £1 precisely the same proportion will be observed. For sums between 5/- and 10/-, 10/- and 15/-, etc., the usual halfpenny may be deducted from each extra shilling.

It should be clearly understood that when, for instance, goods to the value of 20/- are ordered, it is not necessary for the purchaser to buy four numbers of the current week's issue of *Hobbies*. All back Coupons should be preserved. Each is available for *three months*, and may be used at any time during that period.



THE INDUCTION COIL.

HOW TO MAKE AND USE IT.

CHAP. I.



THE many beautiful experiments which can be performed with the Induction Coil, as devised by Rhumkorff, make this little piece of apparatus of special interest to those amateurs who merely wish to pleasantly while away a little of their leisure time, rather than make a serious study of Electrical Science. In treating this subject, therefore, it will only be necessary to tread but very lightly upon Science, and as far as possible all remarks will be confined to the practical and experimental side.

Before entering upon the construction and working of the Coil proper, a passing glance may be taken at a few simple explanatory experiments, which will enable readers to understand much of the why and the wherefore of what is to follow. On rubbing a glass rod with a silk handkerchief, both being perfectly dry and clean, we impart to the rod certain properties which it did not before possess; these properties, which are due to electrification, can be best demonstrated with the aid of suspended Pith Balls. In Fig. 1 is shewn a stand with a horizontal arm, from which are suspended two Pith Balls by means of fine silk threads of equal length, so that the Balls hang down in contact with each other. On placing the electrified glass rod somewhat close to the Pith Balls, the latter will be attracted to the rod, and after contact will be repelled. This repulsion is also manifested between the Balls themselves, for they no longer touch one another but stand out at an angle (see Fig. 2). After a little time, however, the charges will be dissipated, and the Balls will drop together again, or they may be discharged by a touch of the hand.



FIG. 2.



FIG. 1.

or resin), and electrify it by friction with a flannel rubber, the same phenomena of attraction and repulsion is shewn, but the electrification will be of a different kind. If the Balls are placed a short distance apart as in Fig. 3, and then simultaneously charged, one by the glass rod, the other by the vulcanite, the two Balls will fly together, and after contact drop down again to the vertical position, discharged, the two charges neutralising each other. It may fairly be assumed then that the charges on the two rods are of different kinds; the glass is said to be positively electrified, and the vulcanite negatively. Similarly, the silk and flannel rubbers become negatively and positively electrified respectively.

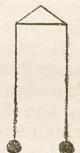


FIG. 3.

Now, although there is a very beautiful modern theory expounding the nature of Electricity, yet it is much too scientific and technical for these pages, so that the foregoing phenomena may be explained by the much older "One Fluid" theory of Franklin. According to Franklin, Electricity partakes of the nature of an imponderable fluid, which all bodies under ordinary conditions possess to a uniform degree. When, by any means, we take away from any body a portion of this fluid, and place it elsewhere, we upset the previously existing equilibrium, which the Electric fluid immediately endeavours to regain. This is precisely what was done when the glass rod was rubbed with silk, and the vulcanite with flannel. In the first case, through the medium of friction, a certain amount of Electricity was taken from the silk rubber and placed upon the glass rod; but in rubbing the vulcanite, exactly the opposite was done. It may now be seen that an excess of Electricity repels a similar excess, but endeavours rather to lose itself in making up a deficiency. Had a metal rod been employed instead of glass or vulcanite, there would have been no apparent electrification; this is because all the metals are good conductors, and the Electricity would have escaped through the body to the ground—or "earth" as it is technically called—which acts as a neutralising

Supposing now that instead of glass and silk we employ a rod of vulcanite (or sealing wax,

agent indiscriminately, either absorbing an excess of the fluid, or supplying a deficiency. Glass and vulcanite being among the worst possible conductors—or conversely, two of the best insulators—retain and accumulate their charges to a considerable extent; the same may also be said of silk and flannel. It is, however, possible to electrify metals provided with insulating handles, as also it is possible to electrify the human body when insulated on a glass stand. The following list indicates a few of the best conductors and insulators:—

Best Conductors—Silver, Copper, Gold.

Good Conductors—Other Metals, Carbon, Plumbago, Acids, Salts (in solution), Sea Water.

Indifferent Conductor—Fresh Water.

Insulators—Shellac, Paraffin Wax, Resins, Sulphur, Glass, Mica, Vulcanite, Indiarubber, Guttapercha, Silk, Paper, Cotton, etc.

The property of induction still remains to be treated before passing from this, the statical branch of the subject. Fig. 4 shews two metal

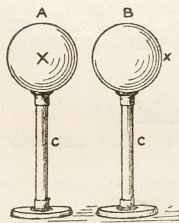


Fig. 4.

Spheres A and B in close proximity to each other, supported on stands in which the upright glass rods, C—C, provide insulation from the ground. We will give a positive charge to A, as indicated by the sign x; this charge on A will then cause a disturbance of the Electric fluid on Sphere B, repelling a certain quantity to the side of it remote from, and causing an equivalent deficiency on the side nearest to A. Thus we say that one side of B is negatively electrified, and the other side positively, by induction through the influence of A. If the x side of B is touched with the finger the positive charge escapes to the ground, but the negative charge remains. By retaining the finger on B, and continuously increasing the positive charge on A, the negative charge on B will also be proportionately augmented, until at last the limit of capacity of the two Spheres is reached. This is, roughly speaking, the principle of the Condenser, an old form of which, called the Leyden jar, is sometimes used in connection with the Induction Coil.

The Leyden jar, see Fig. 5, is simply a glass jar coated both inside and out with tinfoil to about an inch or so from the top; the mouth is then fitted with a cork through which runs a brass rod provided with a brass ball on the outside extremity. A brass chain suspended from the other end of the rod makes a loose connection with the inside coating of foil, which can obviously be charged through the ball and rod, while a ground connection with the external foil may be made with the hand. Condensers are discharged by connecting the two coatings of foil by suitable means, while the advantage attending their employment lies in their enormous power of accumulation, thus giving much more powerful discharges than could be otherwise obtained. Their practical use will be dealt with later on.

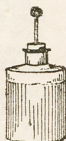


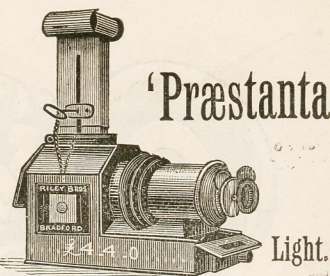
Fig. 5.

(To be continued.)

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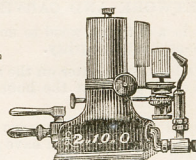
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'LAWSON'

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POPULAR SCRIPTURE LANTERN SERVICES.

Our Bible Lantern Sets are by far the best ever published, comprising—

OLD TESTAMENT, 720 slides } ALL DIFFERENT
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Smaller Selected Sets, including Life of Christ, Parables, Miracles, Childhood of Jesus,

CHRIST ON CALVARY,
David, Joseph, Prophets, Women of the Bible, Brazen Serpent, Blind Bartimaeus, Good Samaritan,
MINISTRY OF ANGELS,
and many others; 18 to 40 slides each set.

"Much the most comprehensive of any series of pictures yet prepared."—*Help*.

"Very complete. . . . Of value to schools, Bible-classes, etc."—*Photographic Times*.

"Nothing could excel or equal them."—*The Christian Union*.

Catalogues gratis on application.

STEVEN BROS., MANUFACTURERS,
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Tearle & Anderson,
CHEAPSIDE, LUTON,

LANTERNISTS' SUPPLY STORES.

OPTICAL LANTERNS, SLIDES, & APPARATUS
FOR SALE OR HIRE.

NOTE.—We give special attention to the selection of, and keep in Stock a large assortment of Slides suitable for

MISSION SERVICES.

Also a Choice Selection of General Subjects in Stock.

Our "LUTONIAN" LANTERN for Oil at £3 7s. 6d., or with "Patent" 4wick Lamp at £3 19s., is a bargain and has already given great satisfaction. The same Lantern is extensively used for Lime-light, and can be fitted at little extra cost.

Write for large detailed Catalogue 1s., with all particulars. Also New Season's Hire List, post free.

TEARLE & ANDERSON, Cheapside, Luton.



In these columns we shall be pleased to answer questions on all subjects coming within the scope of *Hobbies*, but it must be understood that, as space is necessarily limited, we cannot attempt to reply to those queries which are of purely personal interest. In no case can we reply to enquiries by post. We shall always be glad to hear from our readers, and to receive suggestions with regard to *Hobbies*. All communications should be marked "Correspondence," and must be addressed to the Editor of *Hobbies*, Bouverie House, Salisbury Square, London, E.C.

FRETWORK AND CARVING.

C.J.L.—Cocobola is a difficult wood to cut with the Fret-saw, being close-grained and gritty.

F. PHILLIPS.—We have your letter on the subject of Wood Burning, and assure you that the hobby will be dealt with later on.

ETHEL.—You should not attempt to carve any work in the Italian Renaissance style until you have gained considerable technical skill.

X.X.—Red Cedar and Satin are the most fragrant of the ordinary Fretwoods. Sandal has the finest perfume of any wood, but it can very rarely be procured.

DESIGN.—American Fretwork Patterns are gradually losing their popularity in this country. As a rule the miniatures are effective, but the full-sized diagrams are often so carelessly drawn and printed that in many cases it is impossible to grasp the idea of the Design.

STAIN.—Carved Oak is greatly improved by being fumigated with ammonia. The process, however, requires an airtight box, and is rather beyond the scope of an amateur. Any large furniture firm could do the work for you satisfactorily.

H. BAGSHAW.—We do not know of any Fretwork Design for an Inkstand where horseshoes are worked in. The idea is good, however, and we have told an artist to think the matter over. You will find a novel Fretwork Pattern for an Inkstand in *Hobbies* No. 5.

H.J.—The best screw nail to use for Fretwork articles is the round-headed one. The under side being flat, the chance of splitting is reduced to a minimum. With an ordinary screw you should clear a hole in the wood sufficiently large to take in the head; otherwise it acts as a wedge, and causes a split.

METAL WORK.

SMITH.—A small Bench Anvil for Bent Iron Work will cost you about 2/-

C.J.E.—Sheet Copper cannot be used as thin as Sheet Brass, as it is much more pliable. Beaten flower ornaments of Copper look well either with Brass or Iron.

HOBBIES THAT PAY.

J.A.K.—This is the time to plant fruit trees. Procure the trees from a good nursery, and inform the nurserymen as to the nature of your soil, its aspect and situation, what class of apples and pears you wish to grow, for what purposes, etc., and leave the selection to him.

NON-SITTER.—The Scotch Grey, the Plymouth Rock, and the Cuckoo Dorking have some features in common—as you say, but the five toes of the Dorking distinguish it at once. Scotch Greys are lighter in colour when young than are Plymouth Rocks, and the latter frequently have pullets among them that are almost black. In Scotch Greys the markings on the feathers are two shades of grey. In Rocks they are grey, white, and black.

STAMP COLLECTING.

A.B.C.—As announced elsewhere, we shall deal with perforations next week.

HAROLD.—The choice of a Stamp Album is entirely a matter for individual taste and judgment. If you write for a prospectus to any of the Stamp Importing firms who advertise in *Hobbies* you will easily get an Album which should satisfy your wants.

H.J.M.—Fiscal Stamps are those that are employed to denote the payment of some item of Government Revenue. Yes, there are Philatelists who collect Fiscals, but very few.

GEORGE.—A collection of 5,700 Stamps is remarkably good, and no doubt you possess many rarities. Stick to your stamps by all means; the old ones will always fetch more than you paid for them.

PHOTOGRAPHY AND LANTERN SLIDES.

JAMES F. HOBART.—Very many thanks for your most kind letter. When you have mastered Photography you must make your own Lantern Slides. You will find this easy enough when making the Slides by "contact," but a little more troublesome when made by "reduction" in the Camera.

SECRETARY.—Many of the Photographic Societies have "sets of Slides," which they loan to each other; whether they will extend this courtesy to outsiders we cannot say. How many Slides do you want, and when do you want them? We have many beautiful Lantern Slides and might be able to help you out of your difficulty.

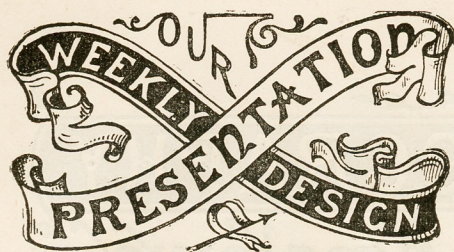
LANTERN SHOW.—Published readings which are sent out with Lantern Slides are often very long and prosy. They are a great help, but when read straight through are apt to bore an audience. Get the reading a week in advance, and with it prepare your own notes on the Slides. Anyone giving a Lantern evening should thoroughly know the Slides he is going to use.

OUTDOOR HOBBIES.

ALPENSTOCK.—Hill-climbing is certainly a most fascinating hobby—to some people at least, but as indoor pastimes absorb attention during the winter months, we must postpone dealing with your favourite amusement (?) until the early summer. During September no less than 700 tourists ascended Ben Nevis.

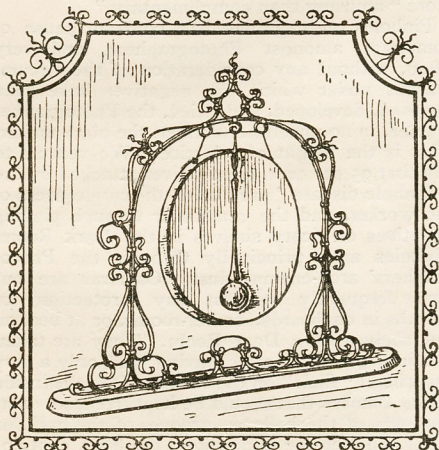
GOLF.—As everyone knows, Mr. A. J. Balfour is the most prominent Golfing Statesman. Sir Edward Grey is the leading Parliamentary Tennis player, and Mr. James Bryce is regarded as the veteran mountaineer, having been at the summit of Mount Ararat. The late Mr. Fawcett ascended Mount Blanc when blind.

W.K.—In our Notes on Sport for this week you will find some particulars as to recent walking feats.



No. 3. TABLE GONG STAND.

With a Bent Iron Ornament such as a Gong Stand, where a question of everyday wear and tear may be concerned, it is absolutely necessary to make everything strong. For this purpose Ribbon Iron $\frac{3}{8}$ inch wide should be used, and special care taken to have all the important Collar Bands fixed tightly. In some cases it may be found advisable to add a touch of solder.



The bottom strip must be particularly well joined to the ornament, and if a couple of rivets could be driven in, their usefulness would not be thrown away.

The wood Stand is plain, but a bevelled edge will improve its appearance and add to its solidity. It should not be less than $\frac{1}{2}$ inch thick. Oak or Mahogany will be found the most suitable wood; if the latter is used the Stand should be polished, but varnish or oil would be found sufficient for Oak. The Iron Work must be firmly fixed to the Stand with screw nails.

The Frame will hold any size of Table Gong up to $6\frac{1}{2}$ inches, but it is not recommended to select one beyond 5 inches in diameter, as the weight might have a tendency to overbalance the article. A 5 inch Gong is comparatively light, and will bear a stroke with the Beater without any danger.

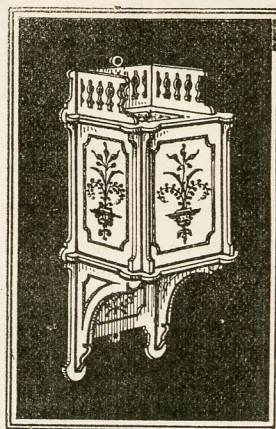
All the Iron Work when put together should receive a coat of the usual dull black paint, which must not be applied too thickly.

[Additional copies of this design may be had, price 3d. each, on application to the Editor of *Hobbies*, Bouverie House, Salisbury Square, London, E.C. The Presentation Supplements will be given during the current week of

publication only, and will not be supplied with back numbers of *Hobbies*. Burmese Brass Gongs, 5 inches in diameter, suitable for this Stand, may be had from the Editor, price 2/9, post free. Beaters, 6d. each.]

No. 4.

HANGING TWINE BOX, WITH OVERLAY ORNAMENT.



The above sketch is a miniature of the full-sized Pattern for Fretwork Hanging Twine Box with Overlay Ornament, which will be given away with each copy of next week's issue of *Hobbies*.

BENT IRON WORK.

Send a 1d. stamp for particulars of our New Tool, "THE IONICAL," pronounced by all who have used it to be invaluable for producing accurate spiral curves.

—✻ BAMBOO WORK, ✻—

The Popular Hobby. Price Lists and Designs sent on receipt of stamp for postage.

THE AMATEUR'S MARKET, LEEDS.
BRITANNIA BUILDINGS,

SALE AND EXCHANGE (LATE ADVTs.)

Wanted, 49th Annual Report of the Registrar General (1886). State price. Tebb, Boscombe-hill, Bournemouth. H 9

Powerful pair Jockey Club Glasses, for field or opera. price, 10/- F. J. Rowe, 11, Alkerden Road, Chiswick, Middlesex. H 10

Mail Carts, Baby Carriages, &c., superior. Presland and Sons, Invalid Carriage Factory, 495, Hackney Road, London. Lists free. H 11

Fretwork, Carving, Bent Iron, and Bamboo Materials; Fretwork Outfits from 9d., Bent Iron 5d. and 6d. per pound, splendid Fretwork from 2d. per square foot. Lund, 70, Manningham Lane, Bradford. H 12

Turning.—Capital Lathe, nearly new, complete, with 40 tools and chucks. Dingle Lodge, Reigate. H 13

Picture, size, 9 ft. by 7 ft.; excellent copy of Raphael, The Holy Family, very good painting in very good frame, 45 guineas, or offer. Anson, Westbourne, Sussex. H 14

Model Japanese Tea House, 1 ft. high, beautifully made, shutters work, interior visible, stand 3 ft. square. Price, 30/- Anson, Westbourne, Sussex. H 15

Important to Librarians, Clubs and Institutes, 460 volumes of the latest authors to be sold at a great reduction, in perfect condition, in one lot or lots of 50. Offers. No dealers. W., Castle Library, Reigate, Surrey. H 15



PHOTOGRAPHY

for Amateurs

NOTES OF THE WEEK.

THERE are no lack of competitions for those who take up Photography as a Hobby. The advanced worker rather runs down medals and prizes, but there is hardly a Photographer, who has his work "hung on the line," who has not made his name by first entering competitions, and afterwards exhibiting. There is no doubt that in these days the best stimulant to genius is competition. We hope many readers of *Hobbies* will enter our "Photography Competition." This first competition is quite a "go as you please" affair, but later on we may suggest subjects. Pen and Ink Sketches for Lantern Slides is another competition; originality of design will have weight in these.

Photography is now a necessity in connection with almost every trade, and in many cases the draughtsman's services may be to a very great extent dispensed with. Machinery, Tools, Furniture, Sheffield Ware, Dress Goods, &c., &c., are all better, and of course more truthfully represented by Photography than by the trade draughtsman, who has a stilted and conventional style which he considers sets off his designs to the best advantage. This is often bad in drawing, and anything but a faithful portraiture of the article it is supposed to represent. In Photography for business purposes great care must be taken to photograph the object from the best point of view and to secure careful lighting; in bright goods it is well to coat the bright parts with a little grease or soap so as to secure strong contrasts. Machinery is better photographed before being actually finished. In photographing a dress the lady wearing it must be posed carefully with a view to set off the garment, and she must remember that in the case of a Photograph for trade purposes she plays only a minor part, and that her business is to help the dress. The use of Photography in business is endless, and the Hobby once acquired and mastered has a far more commercial value than shorthand or the "slight knowledge of French and German"—but to do the best with Photography the worker must have originality, and above all things a good sound knowledge of light and shade.

The Society of Amateur Photographers of New York is an enterprising body of ladies and gentlemen, and on the occasion of the recent race between the *Defender* and *Valkyrie* chartered a special steamer in order that the members might

have an opportunity of taking Photographs of the great race. The results, we understand, were more "amusing than complimentary."

Pinholes on negatives is a constant cause of complaint amongst Photographers, and very often, without any consideration of the circumstances under which the negatives have been exposed, developed, and dried, the Photographer blames, in no uncertain manner, the plate maker. This is the height of injustice. We venture to say that 95 per cent. of negatives attacked by the "Pinhole disease" are due to the carelessness of the worker, and the remainder through placing negatives on dusty shelves in the Dark Room. Pinholes arise principally through the Photographers' arch-enemy—dust. Cameras are put away frequently without any protection for months in cupboards, lumber-rooms, or at best on the shelves of a Dark Room. They are taken out into the field after having had only a very superficial "flick" on the outside. It is the inside of the Camera that should be kept free from dust, the folds of the bellows, grooves of the back, or frame, holding the dark slides, the front containing the lens mount,—all these permit of the accumulation of minute particles of dust. The dark slide when opened for the reception of the plate should always be carefully dusted. The plates also should be dusted with a soft camel hair brush (kept free from dust and put away carefully after use) before being put into the dark slide. After exposure and before development the dusting process must be again resorted to, and finally, when drying, the greatest care must be taken that no dust settles upon the film. If these precautions are taken "Pinhole disease" will be unknown.

In connection with the Manchester Corporation Technical Schools, we note that Photography is to be taught by Mr. C. F. S. Rothwell, F.C.S. The first course comprises thirty lectures suitable for those beginning Photography; an advanced course is also arranged. The lectures are to be illustrated with the most modern apparatus and practical demonstrations, and Saturday afternoon excursions will make the course both instructive and interesting.

Mr. Rothwell has also been retained by the Committee of the Rochdale Borough Technical Schools to deliver a similar course. The text book to be used is "Principles and Practice of Photography," by Chapman Jones, F.I.C., F.C.S.

"Astronomical Photography" recently formed the subject of an admirable lecture delivered by Mr. W. E. Plummer, M.A., F.R.A.S., before the members of the Liverpool Amateur Photographic Association. Lantern Pictures were shewn of the Milky Way, Jupiter and Saturn, &c., &c., from negatives taken by Professor Bernard, Professor Henry, Dr. Isaac Roberts, and others.

In the competition promoted by the *Glasgow Evening News*, the Photographs sent in have increased from 133 in 1894 to 650 this year.

The Ross-Hepworth Electric Arc Lamp was used at a Lantern Exhibition, held under the auspices of Sir David Salomars recently at Tunbridge Wells. An alternating current was used and a splendid light obtained.

Mr. Alfred Watkins, of Hereford, has most liberally offered £10 10s. in prizes for a developing competition. The conditions are that the prizes shall be awarded to the negatives which, cut in two and developed by different methods or developers, shall show the greatest contrast in printing gradation. The Photographic Club have, we understand, consented to nominate the judges, and Messrs. J. B. B. Wellington and F. A. Bridge have agreed to act.

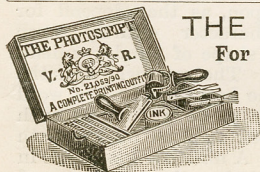
Here is a hint for writing upon glass:—Dissolve 5 parts of copal varnish in 32 parts of oil of lavender, and add the desired colour. The colour dries fairly quickly, but if oil colours be used dryers should also be added. When dry, it is said that this ink will withstand the action of chemicals.

The second volume of "Photographic Primers," written by Capt. Abney, has just been published. The first volume has been issued some months, and was devoted to *Negative Making*. The book before us treats of *Instantaneous Photography*, and deals with speeds of plates and shutters, giving much valuable information to the worker in this particular branch of Photography.

An authority upon Platinotype Printing recently said:—"As the Platinum paper is so much more sensitive than ordinary silver paper, the rough and ready method of examination in the open air is scarcely advisable. It is better, therefore, to turn down all the frames of even a small batch while the examination of No. 1 is being made. As the impression is very faint, more judgment is needed to determine when the negative is fully printed. Be deliberate in arriving at a conclusion, and examine closely the more delicate part of the negative."

There is a talk of an International Exhibition of Photography being held in Glasgow next autumn, but no decision has at present been arrived at. It is now some years since an Exhibition was held,—and a very successful one it was. The committee gathered together splendid work, and the public attended in very large numbers.

*London: Sampson, Low, Marston, & Co., Fetter Lane. E.C.



THE PHOTOSCRIPT For Titling Negatives.

Full particulars and Specimen Photograph named with the Photoscrypt free on application.

H. LINDNER,

170, FLEET ST., LONDON, E.C.

PRIZE Competitions

It is our intention that all Competitions which will be announced from time to time in this column shall be decided by the skill or ingenuity of the Competitors, and not be in any way dependent on chance. Prizes will be given for Articles of Fretwork, Carving, etc., Designs, Sketches, Photographs, Essays, and numerous other subjects which will be stated in due time. The Prizes offered will take the form of Cash, Fretwork Machines and Outfits, Cameras, and other articles.

FRETWORK.

We hope later on to offer a valuable Prize for the best Fretwork Model made from the St. Paul's Cathedral Design which we are presenting to annual subscribers, and which was fully described in No. 1. Meanwhile we offer Three Prizes for the best Midget Photograph Frames made from the first Presentation Design:—

First Prize, A Treadle Fretwork Machine, with Nickel Plated Tilting Table, Dust Blower, and Emery Wheel.

Second Prize, A Finely Nickel Plated and Polished 14-inch Hand Fretsaw Frame.

Third Prize, One Gross of the best Fretwork Saw Blades.

The choice of wood, method of cutting, and all matters relating to the actual work are left entirely to Competitors. The Frames, for example, may either be polished or left plain. All Frames should be packed securely, in a cardboard box if possible, and must have the name and address of Competitor clearly written on a label which must be securely attached to the Article itself. Frames sent in for Competition will be returned, if desired; for this purpose a fully addressed and stamped label must be enclosed. In no case can Articles be returned unless sufficient stamps are sent to cover postage. Parcels should be marked "Frame," and must be received at our office not later than November 23rd.

PHOTOGRAPHY.

We will give every month a prize of Ten Shillings for the best Photograph, not to exceed 7½-in. by 5-in., and Five Shillings for the second best. The choice of subject is left entirely to the Competitor. Photographs cannot be returned, and we reserve the right to reproduce any of them in *Hobbies*, if thought desirable. Photographs for Competition will be received up to the last day of each month, and those for the first Competition must be sent to our office not later than November 30th, marked "Photo."

LANTERN SLIDES.

For the best Pen and Ink Sketch of a set of three original humorous Magic Lantern Slides we will give Ten Shillings, Five Shillings being awarded to the second best. The subjects are left entirely to Competitors. Sketches should be full size, and should be drawn in Pen and Ink only. The Prize Sketches, if of sufficient merit, will be reproduced in *Hobbies*. Mark "Slides," and send in by December 7th.

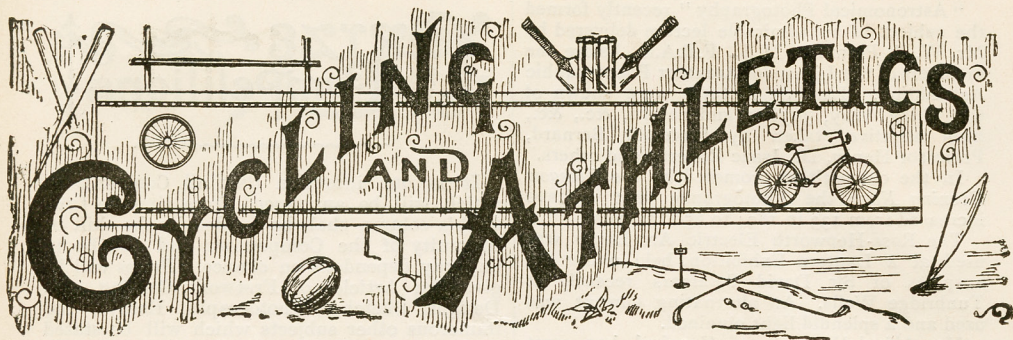
BAZAARS.

Two Prizes of Ten Shillings and Five Shillings are offered for the best suggestions for a Bazaar Side Show. In deciding this Competition the novelty and practical character of the suggestions will be chiefly taken into account. Paragraphs must not exceed 200 words in length, and must reach us by November 16th. The Envelope should be marked "Bazaar."

NOTICE TO COMPETITORS.

All Articles, Sketches, etc., for Competition should be addressed to the Editor of *Hobbies*, Bouverie House, Salisbury Square, London, E.C. The name and full address of Competitor must in every case be sent.

NOTE:—No correspondence can be entered into with Competitors, and all awards made will be final.



NOTES ON SPORT.

FEW people would credit the statement that it is ten years since the introduction of the safety, or small geared rear driving bicycle. Yet such is the case, and a dinner was given not long ago by Mr. Starley to celebrate the event. Any number of people claim to be the "inventors" of the safety bicycle. Of the original designers of the now all popular form of cycle a Mr. Lawson has perhaps the greatest right to be considered, but to Mr. Starley the honour is accorded, by general consent, of being the real inventor and introducer of the rear driver in practical form. We need hardly point out how valuable an invention this was. The high "ordinary" bicycle was a capital beast when you were master of it, but it required a complete apprenticeship which none but the young, athletic, and enthusiastic would dream of entering upon. The high machine is still ridden now by an occasional old timer, but to all intents and purposes it is dead, completely ousted from its former triumphant position by the more speedy and more tempting safety.

Fast walking has been described as an ungainly art, but is nevertheless a branch of athletics which requires more skill, style, and strength than almost any other. The English walking champion, W. J. Sturgess, has made a special point of the art of walking, and if it is ungainly he has studied it carefully, and he even went so far last year as to lie low for some little time in order to unlearn a style which he considered detrimental to his progress, and to acquire an entirely new improved method of progression. It is evident that his attention to these matters was time well spent, for he has now going grandly and would seem to have all the records at his command. Sturgess' development and wonderful speed form one of the most striking features of the athletic season.

W. J. Sturgess' latest feat, that of walking 8 miles in the hour, is quite unprecedented in amateur pedestrian circles. The London Athletic Club made a special 8 miles' handicap for the purpose of drawing the champion out. The handicap was a very poor one, as the scratch man was in front before half the journey had been accomplished, and walking with scrupulous fairness he won with the greatest ease and covered 8 miles 270 yards in the 60 minutes.

We always associate genuine amateurism and cross country running. A man who thinks it

good enough to turn out in bad or good weather and run for the mere love of the thing, and without even a hope of any reward in the shape of prizes, must be regarded as the ideal athletic amateur. Many of the big cross country clubs are dead, but we are glad to see that the sport still flourishes, excellent reports of opening other runs coming from all parts of the Kingdom. One of the great secrets of success in this enjoyable form of sport is to avoid too many competition runs. Plenty of good fun and genuine "hare and hounds" work should be the rule, with an occasional handicap or fast inter-club run as the exceptions. Too large a proportion of hard work will frighten away novices and moderate runners who would be only too glad to take part in more ordinary slow runs. We have played at paper chasing on bicycles before now and found it very good fun indeed. A cycle will make better progress over country than some people might think, but the essence of the game when bicycles are used lies not in the speed, but in the hiding and dodging. Even in athletics proper we think a little more attention to what some people are inclined to look upon as the childish part of the game would secure for the sport greater popularity as a winter pastime. It is a great mistake to run "all out" every Saturday.

Some wonderful speed trials have recently been made on bicycles, especially on the road. Not long ago F. J. Osmond and F. Chinn, two of the fastest men in England, covered a mile on a tandem on a secluded bit of road about 20 miles from Birmingham in the phenomenal time of 1 min. 36½ sec.—nearly forty miles an hour. The course was mostly downhill but hardly any wind favoured the riders. Speaking on the subject of these very fast times Mr. Osmond has stated that the only limit to speed is the air resistance. With a big enough wind behind him and a suitable gear Mr. Osmond sees no difficulty in a mile a minute speed being attained. Records of this sort are of course no standards to go upon, as they depend for their phenomenal character entirely upon extraneous aids in the shape of wind, gradient, and outrageous gears. The man who gets the highest wind makes the best time. The word "record" ought never to be applied to such ridiculous performances. Speed on the path continues to increase. A mile has been done in 1 min. 53 sec., 5 miles in less than 10 min., and 29 miles and a few yards in the hour.

FOR Sale, and Exchange.

*. We intend each week to set apart a page for the benefit of those readers who may desire to sell, buy, or exchange any articles. The charges for advertisements (prepaid) will be sixpence for every twelve words or less, name and address inclusive, and one halfpenny for every additional word. Single letters, initials and figures are each counted as a word; but undivided numbers (as 152), and prices (as 10s. 6d.) count as only one word each. In every case the name and address of the advertiser must be given for publication, and we cannot at present undertake to supply a private name or number and receive replies to advertisements at our office. All advertisements must be accompanied by remittances, otherwise they cannot be inserted. Whenever possible, payment should be made in Postal Orders, and not stamps. Letters should be marked "Advt.," and must be addressed to the Editor, *Hobbies*, Bouverie House, Salisbury Square, London, E.C.

NOTE.—Trade Advertisements can only be inserted in this page at the rate of one shilling per line.

Electrical Hobbies. Write for New Enlarged List; will just suit you; prices low; best quality. Electric:—Lord Street, Openshaw, Manchester.

Fretwork Patterns. Splendid Assorted Parcels, New Designs, 9d., post free. R. Padley, 690, Brightside Lane, Sheffield.

Old Oak Carved Dresser Sideboard, very quaint, 4 feet long, 3 feet high, £7 7s. 0d. Photo Id. J. W. Partridge, Alvechurch, Worcestershire.

Poultry and Ducks. All the useful and fancy varieties of Poultry and Ducks for stock and exhibition purposes supplied by R. B. Rose, the Aviaries, Sutton, Surrey.

Stamps.—British, Foreign, Colonial, bought, sold, exchanged. Approval selections. Wildey, Park Walk, Chelsea.

Stamps.—Wanted, penny reds, thousands only; imperforate, hundreds only; blacks, blues, dozens. Send samples. No dealers. Col. Badgley, Exmouth.

Steel Files and Tools. Amateurs supplied with small lots at lowest prices; inquiries invited; stamped envelope for prices, &c. Gillam, Milton Street, Sheffield.

Several Fretsaws and Lathes, second hand, to be sold cheap. Send for Monthly Register containing details of Engineers' Tools, etc. Britannia Co., Colchester, and 100, Houndsditch, London. State your precise requirements.

The SWAN FOUNTAIN PEN

3 SIZES 10/6, 16/6 & 25/-

Illustrated Catalogues free on application to

MABIE, TODD & BARD

93 Cheapside E.C. or,
95 Regent St.

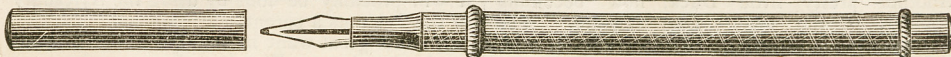
W.

How Mr. Hall Caine wrote
"The Manxman."

Yes, if the fact is of any consequence, you are very welcome to say that I wrote "The MANXMAN" with the Swan Fountain Pen. It has become quite indispensable to me. I can use it with ease and certainty anywhere and at any time even in the dark in bed, and on horseback.

HALL CAINE.

To Mabie, Todd & Bard,
93, Cheapside, London,
E.C.



REDUCED FACSIMILE, NIB GUARANTEED 14 CARAT GOLD IRIIDIUM PEN.

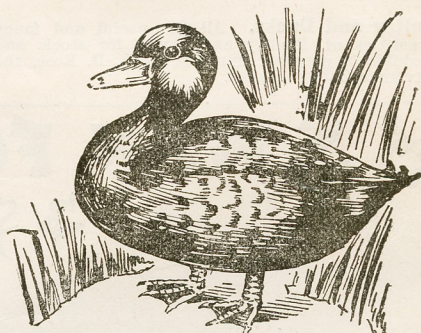
Hobbies that Pay.

* * Before going into any details on the profitable handling of all subjects that will come under the title "Hobbies that Pay," it may be stated that an Expert has been specially arranged with to give the readers of *Hobbies* advice and information of a practical nature about Poultry, Bees, Rabbits, Dogs, Horses, Pigs, Cage Birds, and Fancy Stock; also on all matters relating to Land, Allotments, Gardening, Trees, Plants, Flowers, Fruit, Vegetables, and on all home and outdoor Hobbies that are of a profitable nature. Replies to queries will be made as generally interesting as possible. It may be as well to say here that we intend to develop the practical side of these and other paying hobbies, and that we shall spare no expense in securing the best practical assistance for the benefit of our readers.

DUCKS AND DUCKLINGS.

THE popularity of Duck breeding for profit is one of the most prominent marks of progress in the modern Poultry world. The continual demand for Ducklings, and the certainty that the prices to be made

by rearing them will be remunerative, have caused this boom in Ducks. Yet there is room for all who care to make the venture, either as a Paying Hobby or as a thorough business; and there is always one encouraging thought in the association, viz.,—that it is helping to turn aside the flood of foreign competition in British markets, and is keeping money in the country. It would be a good beginning for any aspiring breeder of Ducks to visit some good Show, such, for example, as the late Dairy Show held at Islington. There an acquaintance could be made with the best types of the different varieties, and a knowledge gained of what the birds should be like at different ages. Domestic, or rather, useful breeds of Ducks in this country are very few in number, compared with the great number of kinds of Poultry. We have but three that are commonly called useful:—the Rouen, the Aylesbury, and the Pekin. Besides those, fanciers keep the Caynga,—a fine, large, glossy black Duck that comes from no one knows where really,—certainly not Caynga. It is probably an improvement on an older breed of English black Duck. The pair of Cayngas that won the first prize at the late Dairy Show, although only five months old, would have gained the medal, had there been one, over all the other sorts as the best pair of Ducks in the Show. Another pretty little Duck, now becoming popular, is the black East Indian. The "possibilities" for raisers of new varieties with this Duck as a foundation are very great. Its characteristics are most distinct.



An East Indian Drake.

In form it is very compact, rather small, and having an appearance of strength. It is very hardy in constitution, its eggs are sweet and dainty, and its flesh has a peculiarly delicious flavour, equal to that of the Pheasant as compared with a common Fowl. In colour it is jet black, with a beautiful metallic green shading on its head and neck. The beak and legs are of a dark slate-black colour, fading or deepening to orange in the older birds. What an improver of new varieties of Ducks should aim at in using this one as an original is to get a breed that will come true to type, that will preserve the sweet flavour of the eggs and flesh of the East Indian, and that will be of an increased size and weight. The Indian Runner Duck crossed with the East Indian might bring a race that would breed true in colour,—brown or buff possibly being the safest and easiest to fix. If a larger bird is desired, the Rouen would suit as the other original. If it be possible to fix a black and white or magpie type, it will probably be done by using the Aylesbury or the Pekin as a parent.

Another great want in the Duck world is an everlasting layer. The best layer we have at present is the Indian Runner. This is an old

breed found plentifully in the North and North-West of England. How old it is, or whether it was originally "developed" by a Duck fancier, it is impossible to say. It has been known in the Cumberland meres and lakes, and has been kept by the cottagers and farmers as the common breed for ages. In colour the Runner varies or sports considerably, and it is to be met with in self-colours in white, black, and dun. Its common colour is a mixture of grey, dun, and white,—the neck being white. They are a very active breed and enjoy perfect freedom in some happy hunting ground, such as a marsh or ditch; in such a haunt they require scarcely any food from their owners. It is possible to meet with laying strains of Runners that will average 150 eggs per Duck in the year.

A word of warning to purchasers or intending experimenters in Duck breeding may be necessary, as many people who have Ducks to sell can give no authentic guarantee as to the purity of their birds, and it spoils all attempts at scientific breeding if one can not depend on the purity of the stock. In-breeding is another weakener of type and stamina that incautious beginners learn a lot about, sometimes when it is too late. One may easily buy Ducks and Drakes that appear to be, and are said to be, pure, but it may turn out that they have been running with other breeds, and have got a cross from them; or that the same family of Ducks and Drakes have been kept together for years, and there has been no attempt made at getting fresh blood, or at selecting the strongest and best for breeding from. As a rule among Ducklings it is easy to pick out those that will grow the fastest and will make the biggest birds. In any brood of Ducks there are always two or three that single themselves out by quickly gaining in size over the rest. Ducks as layers, on the contrary, are generally the small, sprightly, active ones. A big, dull-looking, loose-feathered, thick-necked Duck is never a good layer. The same may be said of Hens, the smart, sprightly ones being always the most regular layers.

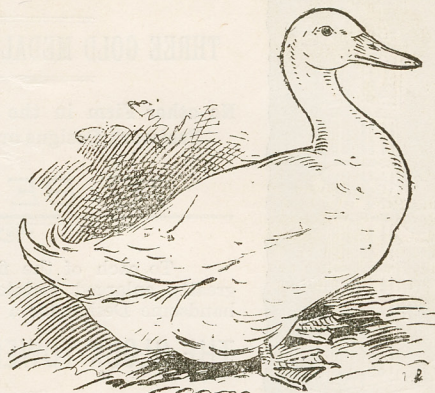
SIZE, VIGOUR, AND STAMINA.

Keeping an eye on the profits to be made by breeding and keeping Ducks as a Hobby, either for egg producing, for fattening, or for exhibiting, the first aim must be to secure vigorous stock birds. Vigour and stamina ensure size and robustness in the offspring; they also give hardiness. Size in Ducks is of first importance when table Ducklings are being produced. It is also the first point in exhibition form. Lest these remarks may be thought to clash with those about the small Ducks being the best layers, it ought to be said that the observation refers to characteristics in any type, and is not meant to mislead in breeding for size. Have large Ducks by all means, but single out those to be kept for laying as early in the growing period as possible. The corn bill is the first economic consideration, and the sooner Ducklings are got fit for market and are sent there the greater will be the gain at the end of the season.

DUCKS FOR PROFIT.

In rearing Ducks for profit, three considerations should be borne in mind—the best Ducks for egg-producing, the best for rapidly attaining a big size, and the best for the two former qualifications combined. The three pure breeds, Rouens, Aylesburys, and Pekins are all large-bodied Ducks. They are all only very moderate layers.

Half-a-dozen Runner Ducks will lay as many eggs as will a dozen of the three just named. It is possible to get an improved layer by using the Runner and crossing it with a larger breed. If a cross-bred—say an Aylesbury-Pekin Drake—be used to Runner Ducks, the young ones produced will be larger than the mother breed, and having extra vigour from the fresh blood will grow fast and make a good size. There are good reasons, apart from that of the infusion of blood, in this selection of a cross-bred male bird.



An Aylesbury-Pekin Drake.

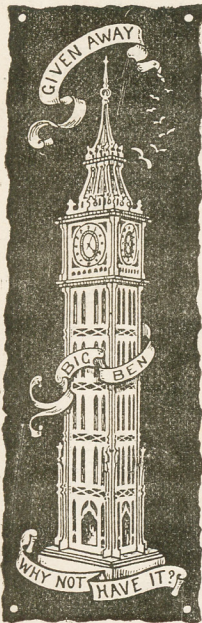
The shape of this bird, as well as its carriage, will be recognised by those who know the two breeds. A great fault in the pure Aylesbury is its big keel; an equally prized feature in the Pekin is its absence of breast bone and its plump, meaty breast. In an Aylesbury the keel almost touches the ground. In the Pekin, the breast, head, and tail are borne almost upright. A cross between the two gives a bird with a big shapely frame and quite as large in size and as quick in reaching maturity as are either of its parents. The Pekin is said to beat the Aylesbury in the flavour of its eggs. Being also a non-sitter it is probable that it will help to perpetuate long-laying qualities in its progeny.

FATTENING DUCKLINGS.

This part of the business is one that affords good and reliable profits. The earlier and the later in the year fertile Ducks' eggs can be got and hatching be carried on the greater will be the gain; also it may be said the more will be the trouble entailed. Ducklings will not grow so fast during winter, but when fat they are worth much more than they are in the autumn when they are most plentiful. The fattening of Ducklings is not a mechanical process by machinery like that used with the fattening of fowls. Ducks will eat plenty to get fat upon without being crammed. They do not need water except as drink, and they may be penned up in any building that has a good floor and is safe from rats, and be kept there till they are fit for market. Ducklings feather when fourteen or sixteen weeks old, and will pay best if sold just before that period. In a Duck neighbourhood, if any one will start and buy up all the Ducks' eggs, and rear as much as he can, there is no limit to the amount of business which may be done—except that of procuring fertile eggs.

*. Hobbyists intending to go in for Duck breeding are invited to write to the Editor of *Hobbies* for any advice or information they may want on the subject.

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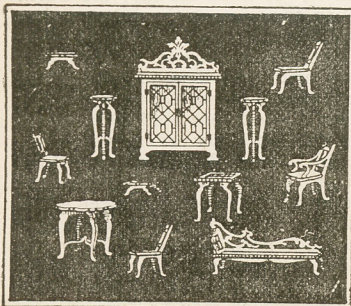
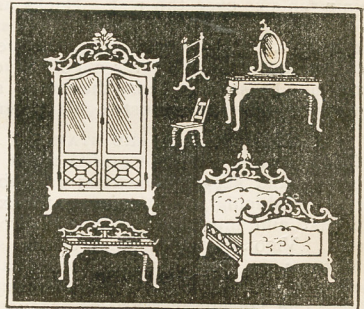
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